Social Security and Medicare: The Impending Fiscal Challenge

By Craig S. Hakkio and Elisha J. Wiseman

Social Security—and the solvency of its Trust Fund—have increasingly become a focus of discussion in the media and policy circles. In President Bush's 2005 State of the Union address, for example, more than a fifth of the address dealt with Social Security. The basic problem is that promised benefits will soon exceed program revenues. Without changes in benefits or funding, the Trustees of Social Security project that assets in the Trust Fund will be depleted in 2041.

While Social Security is a serious problem for taxpayers and beneficiaries, Medicare poses an even greater challenge. Indeed, with healthcare costs rising much faster than the growth in the economy, Medicare spending is also on an unsustainable path. Together, the two programs' benefits currently amount to about 6 percent of GDP. By 2080 they are projected to swell to 20 percent.

With spending on these two programs projected to grow faster than the nation's GDP, the Board of Trustees of Social Security and Medicare have concluded that "We do not believe the currently projected long-run growth rates of Social Security and Medicare are sustainable under current financing arrangements." To keep the programs solvent without slashing benefits or increasing tax revenues, the federal budget deficit

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must grow drastically. Thus, finding permanent solutions to these problems is critical, and the problems only become larger the longer reforms are delayed.

This article provides a framework for understanding the nature of the fiscal challenges posed by Social Security and Medicare—a prerequisite for finding specific solutions. The first section of the article describes the fiscal challenge of Social Security. The second section describes the same for Medicare. The third section puts the nature of the Social Security and Medicare challenges in perspective. The fourth section discusses the growing consequences of waiting to solve these severe problems.

I. THE SOCIAL SECURITY CHALLENGE

While Social Security is not an imminent crisis for the nation, it does represent a significant and inevitable challenge. As the baby-boom generation begins to retire, Social Security expenditures are projected to increase much faster than revenues. Indeed, current projections indicate that the Social Security Trust Fund will run out of money in 2041. In this event, new revenue sources will be needed to pay for promised expenditures—or else promised benefits must be cut to match revenues. This section provides some background on the history and structure of Social Security and then takes a detailed look at the looming fiscal challenge.

A brief history of Social Security

In 1934, President Franklin D. Roosevelt announced his intention to Congress to create a social insurance program that would provide economic security for the aged. Congress drafted and the president signed the Social Security Act in 1935, creating a social insurance program that supported individuals 65 and older after retirement.

Social Security is designed to protect against the loss of earnings due to retirement, death, or disability. Social Security is actually two separate government programs—Federal Old-Age Survivors Insurance (OASI) and Disability Insurance (DI). OASI pays monthly benefits to

retired workers or to the survivors of deceased workers, while DI pays monthly benefits to disabled workers and their families. Together, the programs are known as OASDI.

The Social Security Act has been amended numerous times since 1935 (Table 1). Most of the changes through the early 1970s expanded the scope of the program. Beginning in 1977, however, many of the changes were designed to slow the growth of benefits as Social Security began to face funding shortfalls.

Social Security benefits and revenues

While Social Security is widely thought of as a program that pays benefits to retirees, only about two-thirds of beneficiaries are retirees. The other beneficiaries are disabled workers and family members of retired, disabled, or deceased workers.[1]

In 2004, 47½ million beneficiaries received a total of $497.1 billion in benefits. Retirees receive benefits based on the highest-earning 35 years of their working life. Initial benefits are indexed to wages (which reflect inflation and productivity).[2] The annual increases in benefits are indexed to the cost of living.[3] Individuals who retire before their normal retirement age are subject to the earnings test and receive a reduced benefit, while those who retire after their normal retirement age receive an increased benefit.[4]

Social Security benefits are funded by two dedicated sources of revenue. The first and larger source of dedicated revenue comes from payroll taxes. The tax rate for OASDI is 12.4 percent. Employers and employees share equally in paying the earnings tax, while self-employed workers must pay the tax in full.[5] Earnings are taxed up to a maximum amount ($94,200 in 2006), which increases with average wages.

The smaller source of dedicated revenue is an income tax on Social Security benefits paid by beneficiaries. Since the Social Security Amendments in 1983, up to half of benefits have been subject to income tax. After 1993, the percentage of benefits potentially subject to income taxes was increased to 85 percent. The revenue from taxing benefits is split between Social Security and Medicare HI, with Social Security receiving the larger share of revenue.[6]

Table 1

CHANGES TO SOCIAL SECURITY

1939	• Add benefits for spouses and minor children of a retired worker • Add benefits for family survivors of a covered worker in the event of premature death
1950	• Increase old-age benefits by 77 percent • Expand number of covered workers
1954	• Create Disability Insurance (DI) part of Social Security by including disability insurance for disabled workers age 50-64 and disabled children, beginning in 1956
1960	• Expand disability insurance to disabled workers of any age and dependents of disabled workers
1961	• Lower age at which men were first eligible to receive retirement benefits with benefit reductions if taken at an early age (occurred for women in 1956)
1972	• Adjust benefits for inflation by introducing cost of living adjustments • Index wages when calculating Social Security benefits
1977	• Decouple indexation of initial benefits from indexation of later benefits for inflation • Increase tax rate • Increase wage base
1983	*Changes resulting from Greenspan Commission* • Raise retirement age (from 65 to 67), starting in 2000 • Accelerate date of increases in tax rate • Make some benefits subject to taxation • Include new federal employees in the Social Security system • Temporarily increase Trust Fund reserves by borrowing from HI Trust Fund • Delay cost-of-living adjustment by six months
1984	• Change eligibility rules and requirements for disability coverage
1993	• Increase extent to which benefits are subject to taxation
2000	• Eliminate retirement earnings test (which limited benefit disbursements to elderly individuals still working) for individuals who have attained normal retirement age

Social Security is generally described as a "pay-as-you-go" system because the benefits paid to current beneficiaries are financed by taxes paid by current workers. While the benefits paid to current beneficiaries depend on their earnings while working, the worker's taxes are not saved and reserved to pay benefits for that worker when retired.

Accounting for Social Security income and spending

The federal government accounts for Social Security revenues and expenditures with the Social Security Trust Fund.[7] When Social Security revenues exceed expenditures, the excess proceeds are used to buy nonmarketable government securities. The government then credits the Trust Fund with an increase in assets. In addition, the government pays interest on these securities, which results in a further increase in Trust Fund assets.[8]

The workings of the Trust Fund can be illustrated using data from 2004 (Table 2). At the end of 2003, the value of assets was $1,530.8 billion, representing the sum of past surpluses. During 2004, dedicated revenue from payroll taxes and benefits taxes was $568.7 billion. In addition, the Treasury Department paid interest of $89 billion on the assets held in the Trust Fund (about 5.8 percent of 2003 assets). Therefore, Trust Fund accounting shows total income of $657.7 billion. Social Security also paid benefits of $497.1 billion and administrative expenses of $4.5 billion, for a total of $501.6 billion. The difference, $156.1 billion, is invested in nonmarketable Treasury securities, which are added to last year's Trust Fund assets. Thus, at the end of 2004, the value of assets in the Trust Fund was $1,686.8 billion.

Social Security has important implications for the government's overall budget. First, no money is actually paid into or benefits paid out of the Trust Fund. Rather, the Trust Fund entries are the result of accounting entries made by the U.S. Treasury Department. Workers actually pay their Social Security payroll taxes, and retirees pay their benefit taxes to the U.S. Treasury, which are recorded as income in the government's budget. The Treasury Department then credits the Trust Fund account with this amount—$568.7 billion in 2004. Similarly, benefits paid to Social Security beneficiaries are paid by the U.S.

Table 2

SOCIAL SECURITY INCOME AND EXPENDITURES IN CALENDAR YEAR 2004 (billions of dollars)

	OASI	DI	OASDI
Assets at the end of 2003	1,355.3	175.4	1,530.8
Total income	**566.3**	**91.4**	**657.7**
Dedicated revenue	487.4	81.4	568.7
Payroll taxes	472.8	80.3	553.0
Taxation of benefits	14.6	1.1	15.7
Interest	79.0	10.0	89.0
Total expenditures	**421.0**	**80.6**	**501.6**
Benefit payments[1]	418.6	78.4	497.1
Administrative expenses	2.4	2.2	4.5
Net increase in assets	145.3	10.8	156.1
Assets at the end of 2004	1,500.6	186.2	1,686.8

Source: Table II.B1, *2005 Social Security Trustees Report*
[1]Benefit payments include "railroad retirement financial interchange."

Treasury and recorded as expenditures in the government's budget. The Social Security benefits paid by the government are then debited from the Trust Fund account.

Second, the interest income credited to the Trust Fund is not a net source of new revenue to the government—and so plays no role in the government's overall budget. The interest entry in the Social Security accounts is simply an intragovernmental transfer. For example, as noted earlier, the Trust Fund balance at the end of 2003 was $1.5 trillion. The interest on this balance was $89 billion, so the government credited the Social Security Trust Fund with $89 billion and debited the government's budget by the same amount.[9]

Third, the Trust Fund acts as the spending authority for Social Security (CBO, November 4, 2002, page 1). As long as the balance is positive, the U.S. Treasury has the legal authority to pay Social Security benefits. If and when the Trust Fund balance is zero, the Trust Fund becomes "insolvent." The Treasury can continue to pay benefits, but the benefits cannot be larger than the revenues flowing into the Treasury

and credited to the Trust Fund accounts. In particular, it should be noted that insolvency does not mean benefits will not be paid. Rather, it simply means that benefits cannot exceed dedicated revenues.

Fourth, Social Security finances affect the government's overall budget deficit because Social Security taxes are paid to the U.S. Treasury and benefits are paid by the U.S. Treasury. Currently, Social Security tax revenues are $67.1 billion greater than Social Security expenditures. This difference represents real resources withdrawn from the public by taxation over and above the real resources given back to the public in the form of benefits. According to the books of the U.S. government, Social Security is providing $67.1 billion of net revenue. The government's overall budget deficit in calendar year 2004 was $401 billion. Were it not for Social Security, the government's budget deficit would have been $468 billion.[10]

An overview of Social Security's long-term outlook

Over the next decade or so, Social Security will be in sound fiscal shape, as dedicated revenues will more than pay for promised expenditures, even as expenditures rise. Moreover, since dedicated Social Security revenues paid to the Treasury Department are currently greater than expenditures paid by the Treasury Department for benefits, the difference helps reduce the federal budget deficit.

Beginning in 2017, though, the situation changes—when projected expenditures exceed dedicated revenues. The Treasury Department will continue to debit the Trust Fund for the expenditures it pays and credit the Trust Fund with dedicated revenue and interest credits. The Trust Fund balance will continue to be positive for a time, and Treasury will continue to pay for benefits. But when Social Security's dedicated revenues fall below promised benefits, the government must draw on other revenue sources to help pay for the benefits. In other words, with no changes in other government spending or revenue, the government's total budget deficit will grow.

Over time, the deficit between dedicated revenue and expenditures is projected to keep mounting. The government will continue to pay promised benefits as long as the balance of the Trust Fund stays positive. Eventually, when expenditures exceed dedicated revenues plus

interest, the Treasury must begin to redeem assets from the Trust Fund. The assets in the Trust Fund are simply IOUs, signed by the federal government. To pay the IOUs the government must look elsewhere for real resources. Thus, the federal budget deficit will continue to deepen.

The Trustees of Social Security project that the Trust Fund's assets will be depleted in 2041. Thus, under existing law, the government will have no choice: It must reduce expenditures by enough to insure that expenditures equal dedicated revenues.[11]

A more detailed discussion of the long-term outlook

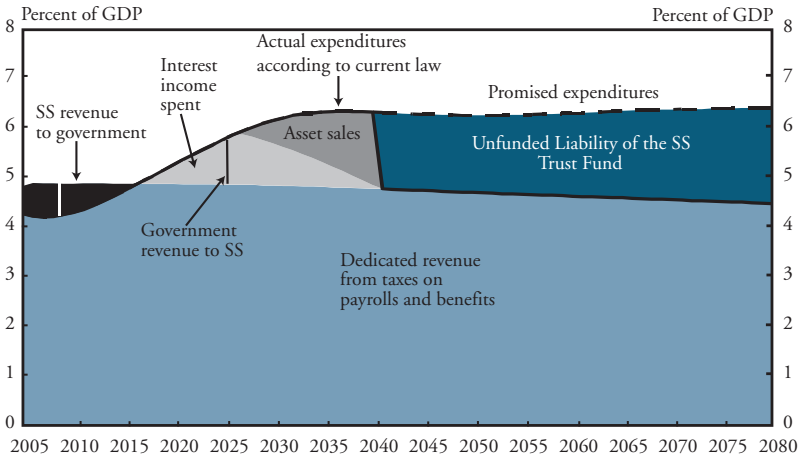
Until now, the discussion has viewed the long-term outlook of Social Security in general terms. This section examines the problems in detail.

The discussion relies on long-term projections using the intermediate economic, demographic, and financial projections of the Social Security Administration and the Board of Trustees for both Social Security and Medicare.[12] The Trustees provide detailed forecasts over a 75-year horizon for the economy (growth of real GDP and productivity), employment (labor force participation rates, hours worked, and earnings), and population (number of workers and retirees). Clearly, estimates and forecasts of this nature are subject to substantial uncertainty, especially as the forecast horizon lengthens. In assessing any long-term implications, it is important to remember this uncertainty.[13]

Social Security expenditures are projected to increase as a share of GDP over the 75-year forecast horizon (Chart 1). In general, total expenditures are simply the number of people receiving benefits times the amount of benefits per person. If the number of people receiving benefits grew at the same rate as the number of people working, then expenditures as a share of GDP would stay approximately constant.[14] However, with the aging of the baby-boom generation, the number of people receiving benefits is projected to grow much faster than the number of workers (Appendix 1 discusses the demographic factors behind the fiscal challenge.) As a result, Social Security expenditures are projected to jump from 4.3 percent of GDP in 2005 to 6.1 percent in 2030 when the last baby boomers turn 65. Expenditures are then projected to stay relatively steady, edging up to only 6.4 percent by 2080.

Chart 1

SOCIAL SECURITY REVENUES AND EXPENDITURES AS A PERCENTAGE OF GDP



Source: Table VI.F4, Table VI.F8, 2005 *Social Security Trustees Report*

The light blue area in Chart 1 shows dedicated revenues as a share of GDP over the forecast horizon. Dedicated revenues are projected to decline slightly from about 5 percent of GDP in 2005 to 4.5 percent in 2080. The projections assume the payroll tax rate remains the same over the projection period so that revenues as a share of taxable payrolls remain fairly constant at about 12½ percent. However, taxable payrolls as a share of GDP fall from 38 percent in 2005 to 33 percent in 2080 (Table VI.F5 2005, *Social Security Trustees Report*).[15]

Between now and 2016, Social Security can easily pay benefits because dedicated revenues are projected to be greater than promised expenditures. During this time, the difference represents a net source of revenue to the federal government, which it uses to reduce the overall budget deficit.[16] In Chart 1, this difference is represented by the black area and is labeled "SS revenue to the government." The surplus is projected to increase from 2006 to 2008 and then decrease through 2016.

From an economic point of view, 2017 is a significant date. Beginning in 2017, and continuing throughout the forecast horizon, promised expenditures are greater than dedicated revenue. As a result, the government will have to begin drawing on other real resources from

the public to pay for the Social Security benefits going to beneficiaries. In other words, Social Security will be running a deficit that must be financed by the federal government in one of three ways: reduce other federal spending, increase other sources of revenue, or borrow more from the public (by running a larger budget deficit). This shortfall is represented in Chart 1 by the vertical distance labeled "Government revenue to SS."

Beginning in 2017 and continuing through 2040, the Social Security Trust Fund will need to augment its dedicated revenues to pay promised benefits. This will occur in two steps. Between 2017 and 2027, the Trust Fund will use some of the interest income it earns on its assets (shown by the light gray area in the chart). For example, in 2018, dedicated revenues are projected to exceed expenditures by $37.6 billion. The Trust Fund will pay this amount by "spending" some of its interest income. Between 2027 and 2040, dedicated revenue plus all of the interest credits will be less than promised expenditures. The Social Security Trust Fund will continue to pay benefits by selling assets, as shown by the dark gray area in the chart.

The difference between expenditures and dedicated revenues is projected to grow over time. In 2018, this deficit is only 0.16 percent of GDP. However, the deficit is projected to grow to 1.1 percent of GDP by 2027 and 1.5 percent by 2040.

This situation is clearly not sustainable. According to the Trustees' projections, the Trust Fund assets will be depleted in 2041. Under current law, Social Security is not allowed to borrow from the public to pay for expenditures. Thus, with no changes in the law, only one option will be available: reduce expenditures to equal available revenue (taxes on payrolls and benefits). In Chart 1, the solid black line shows expenditures that are consistent with current law, assuming that Trust Fund assets are depleted in 2041. The line equals promised expenditures before 2040 and dedicated revenues afterward.

In 2041, promised expenditures are greater than the expenditures allowable under current law. The amount that promised expenditures must be reduced can be viewed as an unfunded liability of the Social Security Trust Fund. It is not an "explicit" liability since current law specifies that expenditures must decline once the assets in the Trust

Fund disappear. Rather, it is an implicit unfunded liability because it represents the value of the promises that will not be met if current law remains in effect.

It is important to distinguish between two different unfunded liabilities: the unfunded liability of the Social Security Trust Fund and the Social Security unfunded liability.[17] As its term suggests, the "unfunded liability of the Social Security Trust Fund" is the present value of the difference between promised expenditures and dedicated revenues after the Social Security Trust Fund assets are depleted. Chart 1 shows this as the dark blue area. According to the Trustees, the present value of this unfunded liability is $4 trillion (*2005 Social Security Trustees Report,* page 2). In terms of today's population, this future obligation amounts to $13,000 per person.

The second unfunded liability—"the Social Security unfunded liability"—represents the government's liability and is the present value of the difference between promised expenditures and dedicated revenue over the entire 75 years (2005-80). The Trustees estimate this present value at $5.7 trillion, or $19,000 per person. In Chart 1, this amount is shown by the difference between the dedicated revenue area and the actual expenditure line until 2041 and promised expenditure line thereafter.

The Social Security unfunded liability is greater than the unfunded liability of the Trust Fund because the interest income and asset sales from the Trust Fund do not represent net new sources of revenue for paying Social Security benefits. In fact, Social Security's unfunded liability is greater than the Trust Fund's unfunded liability by an amount equal to the current value of the Social Security Trust Fund.

II. THE MEDICARE CHALLENGE

Like Social Security, Medicare's expenses are projected to mount steadily as the baby-boom generation ages. But Medicare is also threatened by another factor—sharply rising healthcare costs. Medicare's Trustees project that spending will rise much faster than Social Security spending and, more important, will make Social Security's fiscal challenge pale by comparison.

A brief history of Medicare

Medicare came into existence as the main part of the 1965 amendments to the Social Security Act. These amendments contained provisions for what are now Medicare Part A, Hospital Insurance (HI); and Medicare Part B, Supplementary Medical Insurance (SMI). Originally, both HI and SMI benefits were provided to anyone 65 or over who qualified for Social Security benefits. HI beneficiaries received premium-free coverage, while SMI beneficiaries were required to pay an additional monthly premium to partly cover the program's costs. The 1965 amendments provided for HI to be funded by payroll taxes and SMI to be financed through appropriations from general revenues of the federal government, as well as from premiums from enrolled individuals. The federal government originally funded half of the SMI program, while beneficiary premiums covered the other half.

Throughout its history, Medicare was amended to cover more individuals, offer new programs and benefits, and revise its financing arrangements (Table 3). The most significant and most recent change to Medicare law has been the enactment of the Medicare Prescription Drug Improvement and Modernization Act of 2003. The main provisions of this act give seniors and individuals with disabilities an option for prescription drug benefits.

This new prescription drug coverage, Medicare Part D, is part of Medicare SMI and is voluntary. Starting on January 1, 2006, all individuals enrolled in the HI or SMI programs became eligible. Voluntary enrollees pay a monthly premium and an annual deductible for a prescription drug plan, which they choose from a list of providers. Amounts for the premiums and deductibles vary based on the type of plan each enrollee chooses. Beneficiaries also pay a portion of the cost of prescription drugs through copayments and coinsurance.

HI and SMI benefits and revenues

Hospital Insurance (HI). The main expenditures include benefit payments and administrative expenses. Expenditures for beneficiaries under HI coverage are different for each individual, depending on an individual's personal medical requirements. HI helps cover inpatient

Table 3
CHANGES TO MEDICARE

1972	• Extend HI benefits to disabled individuals under age 65 and those under age 65 with end-stage renal disease • Extend SMI benefits to individuals under 65 and eligible for HI benefits • Allow voluntary participation in HI program with additional monthly HI premium • Adjust financing arrangement of SMI so general revenue transfers from Treasury would cover expected cost of program in excess of total income from individual premiums (even if revenue transfer is greater than 50 percent of total cost)
1980	• Extend HI coverage to anyone eligible for Social Security benefits, if that person were to apply
1982-83	• Extend HI coverage to federal civilian employees and employees for nonprofit organizations
1985	• Assess penalties for enrolling late for Medicare HI benefits for voluntary participants paying monthly premiums
1989	• Allow disabled individuals to purchase HI or SMI coverage with premiums if they no longer qualify for Social Security disability benefits because their earnings exceed a specified amount
1994	• Elimination of HI taxable earnings base, all taxable earnings now subject to Medicare HI taxes
2003	• Enact Medicare Prescription Drug Improvement and Moderniza tion Act of 2003

care in hospitals, including critical access hospitals and skilled nursing facilities (not custodial or long-term care). It also helps cover hospice care and some home healthcare. Premium-free HI coverage is available to individuals 65 and older, those under 65 with certain disabilities, and anyone with end-stage renal disease (which requires permanent kidney failure dialysis or a kidney transplant). To receive premium-free coverage, qualified individuals must also have at least ten years of Medicare-covered employment.

Medicare HI has three dedicated sources of revenue. The primary source is payroll taxes levied on covered workers and employers.[18] In contrast to Social Security, Medicare HI payroll taxes are levied on an individual's total earnings, no matter how large (Social Security taxes are

only levied on earnings up to $94,200 in 2006). Employers and employees share in the cost of the HI payroll tax, contributing 1.45 percent each of the employee's taxable earnings. Self-employed individuals must pay the full 2.9 percent of total taxable earnings.

The second source of dedicated income is premium income. Recipients do not pay a monthly premium if they or a spouse paid Medicare taxes while working. However, individuals not qualified for premium-free coverage can purchase Medicare HI coverage by paying specified monthly premiums ($393 per month in 2006).[19] All HI beneficiaries must pay an initial deductible during hospital stays (in 2006, $952 for a hospital stay of 1-60 days).[20]

The third source of dedicated revenue is income from the taxation of OASDI benefits. As noted earlier, the revenue is split between Social Security and Medicare, with the smaller share going to the Medicare HI Trust Fund.

In addition to these sources of revenue, the HI Trust Fund also includes interest credits on the Trust Fund's assets. Like Social Security, these interest credits are intragovernmental transfers and do not represent a net new source of revenue for paying for benefits.

Supplementary Medical Insurance (SMI). SMI (Medicare Part B) helps cover doctors' services and outpatient care. Also covered are services by physical or occupational therapists and some home health care (HI does not cover these types of services). SMI is available to all HI enrollees. The new prescription drug program (Medicare Part D) is available to every person with Medicare coverage.

The financing arrangement of SMI is quite different from Social Security and HI. In general, dedicated revenues for SMI are paid by beneficiaries in the form of monthly premiums, which are set to cover 25 percent of Medicare expenditures.[21] The other 75 percent is covered by general revenue transfers from the U.S. Treasury. While this 75 percent contribution is a formal budget obligation, it is not considered dedicated revenue because the law does not specify specific revenue sources.

All SMI (Part B) recipients, unlike HI recipients, must pay a monthly premium ($88.50 per month in 2006) to receive the added health insurance coverage.[22] Furthermore, they must pay an annual deductible ($124 in 2006) before Medicare begins to pay its share of

the costs of these medical services. Beginning in 2006, the annual deductible for SMI will be indexed to an inflation factor (previously it was set by statute).[23] These premium and deductible rates will change on an annual basis.

For prescription drug coverage (Medicare Part D), recipients will have to pay a monthly premium (which varies by plan), and a yearly deductible (no more than $250 in 2006). In addition, beneficiaries will pay a part of the cost of prescriptions drugs in the form of a copayment or coinsurance. Costs to the beneficiary will vary depending on the plan chosen. With a higher monthly premium, recipients can receive a plan with more coverage and additional drugs. Those with low income or limited resources may qualify for extra help and may not have to pay a premium or deductible.

Accounting for Medicare income and spending

Medicare HI and SMI operate under different financing arrangements. The HI Trust Fund operates similarly to the Social Security trust fund. When HI revenues exceed expenditures, the government credits the trust fund with an increase in assets equal to the excess of revenues over expenditures. As with Social Security, the government also pays interest credits on the Trust Fund's assets, further increasing the fund. The column labeled HI in Table 4 outlines the operations of the HI Trust Fund in fiscal year 2004.

In 2004, HI revenues from payroll and benefit taxes, premiums, transfers, and interest income were $183.9 billion and expenditures were $170.6 billion. As a result, assets in the Trust Fund increased by $13.3 billion. The operations of HI have the same effect on the overall federal government budget as that of Social Security. If dedicated revenues exceed expenditures in any given year, then the program acts as a source of supplementary income for the government.

As Table 4 shows, SMI revenues in 2004 were $31.4 billion from premiums and $100.4 billion from the federal government. Expenditures were $138.3 billion. Since expenditures were slightly larger than revenues, the Trust Fund redeemed $4.5 billion of assets. Thus, with 75 percent of SMI program expenditures financed by the government, SMI is always a direct drain on the federal budget.

Table 4

MEDICARE INCOME AND EXPENDITURES IN CALENDAR YEAR 2004 (BILLIONS OF DOLLARS)

	HI	SMI	Combined
Assets at the end of 2003	256.0	24.0	280.0
Total income	*183.9*	*133.8*	*317.7*
Dedicated revenue	167.2	31.4	198.7
Payroll taxes	156.7	-	156.7
Taxation of benefits	8.6	-	8.6
Premiums	1.9	31.4	33.4
Interest	15.0	1.5	16.5
General revenue	.6	100.4	101.0
Other	1.2	.4	1.6
Total expenditures	*170.6*	*138.3*	*308.9*
Benefit payments	167.6	135.4	302.5
Administrative expenses	3.0	2.9	6.4
Net increase in assets	13.3	-4.5	8.8
Assets at the end of 2004	269.3	19.4	288.8

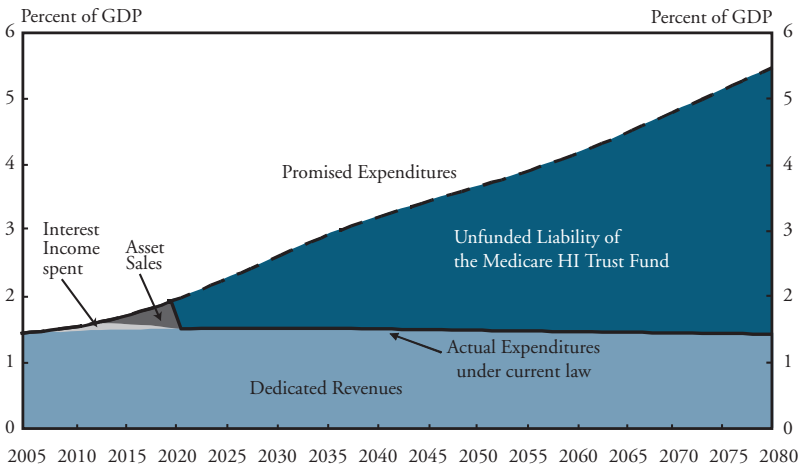
Source: Table II.B1, *2005 Medicare Trustees Report*

The outlook for HI

Medicare HI expenditures are projected to grow rapidly over the forecast horizon (Chart 2). (Appendix 2 discusses how data for 2015-20 were calculated.) The same demographic factors causing Social Security expenditures to rise also affect HI. Unlike Social Security, though, the cost of Medicare benefits depends on the cost of healthcare rather than past earnings. With healthcare costs rising much faster than growth in the economy, Medicare HI faces a significant cost challenge. Over the past half century, for example, annual healthcare costs have risen more than two percentage points faster than GDP. The Trustees of Medicare assume this divergence will gradually decline to one percentage point annually. Thus, while Social Security expenditures relative to GDP should eventually become relatively stable, HI expenditures are projected to climb from 1.5 percent of GDP today to 5.5 percent by 2080. Meanwhile, HI's dedicated revenues as a share of GDP are projected to

Chart 2

MEDICARE HI REVENUES AND EXPENDITURES AS A PERCENTAGE OF GDP



Source: Table VI.F4, Table VI.F9, *2005 Social Security Trustees Report*; Table II.E1, Table III.B4, *2005 Medicare Trustees Report*, and authors' calculations

remain relatively stable at about 1.45 percent (the light blue area in Chart 2). They remain stable, assuming the payroll tax rate stays at 2.9 percent of taxable payrolls.

HI expenditures exceeded dedicated revenues in 2004 and are projected to continue doing so throughout the forecast horizon (Chart 2). In fact, the difference between dedicated revenues and expenditures increases to 4 percent of GDP by 2080. Indeed, HI's deficit in 2080 will be double that of Social Security (4 percent versus 1.9 percent).

When HI expenditures exceed dedicated revenue, as they now do, Trust Fund assets are used in two steps. From 2005 to 2011, interest income will be needed to pay promised benefits (the light gray area in Chart 2). Beginning in 2012, the Trust Fund assets will be redeemed until depleted (the dark gray area in Chart 2). According to projections, the Medicare HI Trust Fund assets will run out in 2020.

Once the Trust Fund assets are depleted, promised expenditures will need to decline to equal dedicated revenues, as with Social Security. In 2021, dedicated revenue from HI taxation will be sufficient to pay

76 percent of promised benefits. However, since the difference between revenues and benefits is growing over time, by 2080 dedicated revenue from taxes will pay only 26 percent of promised benefits.

The amount that promised expenditures must be reduced can be viewed as the unfunded liability of the Medicare HI Trust Fund (the dark blue area in Chart 2). This amount can also be viewed as how much additional revenue (beyond dedicated revenue) would be needed to pay all of HI's promised benefits. According to the Trustees, this amount is $8.6 trillion. Thus, the unfunded liability of the Medicare HI Trust Fund is more than twice as large as that of the Social Security Trust Fund ($4 trillion).

As noted earlier, interest earnings on Trust Fund assets and the revenue from redeeming the assets are simply intragovernment transfers and not a net source of new revenue to the Treasury. While the Trust Fund accounting records the interest earnings and asset sales as revenue, the federal government must finance the interest payments and asset redemptions with some combination of higher taxes, lower spending on other government programs, or greater federal borrowing. That is, from the government's perspective, all Medicare HI benefits must be paid for by revenue raised from the public—either from Medicare taxes or from other government sources.

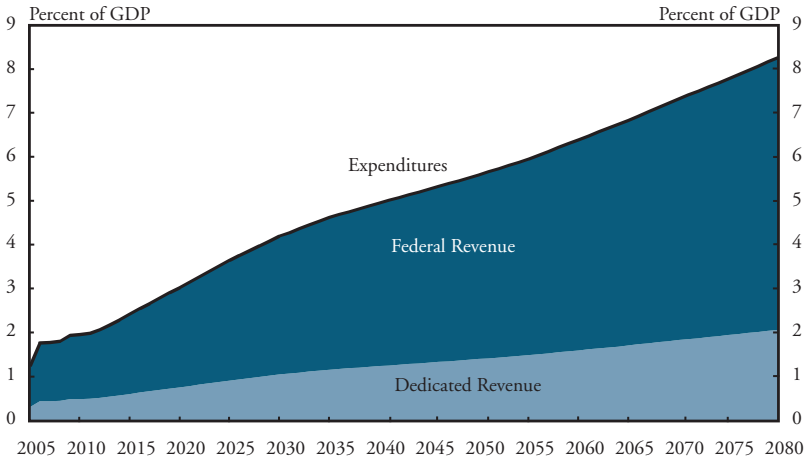
The present value of the additional federal revenue needed to pay for HI benefits, over and above dedicated revenue, is $8.8 trillion. This unfunded liability of Medicare HI corresponds to the present value of the area between the actual expenditures line until 2020 and the promised expenditures line thereafter, and the dedicated revenue area in Chart 2.[26]

The outlook for SMI

SMI expenditures are projected to increase rapidly over the forecast horizon (Chart 3). Expenditures will increase for the same reasons as for HI expenditures—demographic changes plus rising healthcare costs. In particular, SMI expenditures are projected to rise from 1.2 percent of GDP in 2005 to 8.3 percent in 2080.

Chart 3

MEDICARE SMI REVENUES AND EXPENDITURES AS A PERCENTAGE OF GDP



Source: Table III.A2, Table III.A4, *2005 Medicare Trustees Report*, and authors' calculations

Chart 3 shows SMI revenues as a share of GDP. It assumes that premium income equals 25 percent of expenditures and federal revenues equal the remaining 75 percent. The light blue area represents dedicated revenue, while the dark blue area represents the government revenue needed to pay for SMI benefits. Federal revenues required by law to pay for promised benefits are projected to rise dramatically—from 0.9 percent of GDP in 2005 to 6.2 percent in 2080. The Medicare Trustees estimate the present value of this formal budget requirement to be $21.1 trillion (2005 *Medicare Trustees Report*, page 174). This is Medicare's SMI unfunded liability.[27]

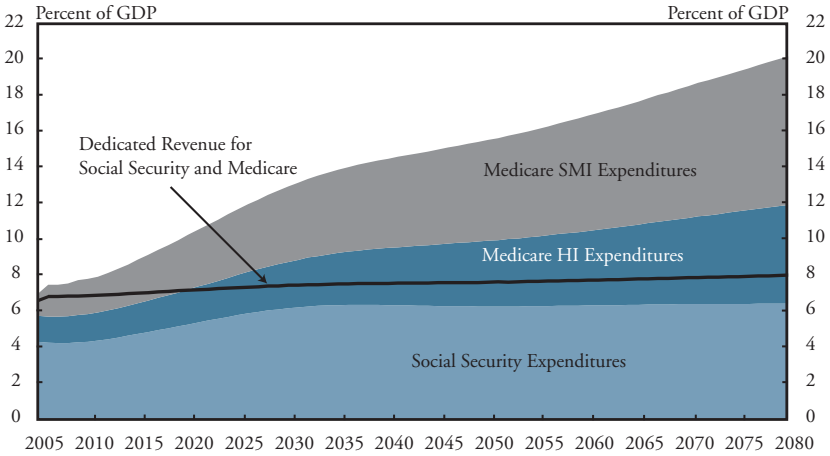
III. THE COMBINED CHALLENGE

Together, Social Security and Medicare pose a severe challenge. This section puts the nature of that challenge in perspective.

The key fiscal challenge posed by Social Security and Medicare arises from the fact that spending on these two programs is growing faster than GDP—clearly an unsustainable situation. And since most of the dedicated revenues for both programs come from payroll taxes, the

Chart 4

FEDERAL SPENDING ON AND REVENUE FROM SOCIAL SECURITY AND MEDICARE



Source: Tables VI.F4 and VI.F9, *2005 Social Security Trustees Report*; Tables III.A2, III.A4, II.E1, III.B4, *2005 Medicare Trustees Report*

costs are projected to grow faster than dedicated revenues. As a result, total federal spending on the two programs is projected to soar from 6 percent of GDP in 2005 to 20 percent in 2080 (Chart 4).

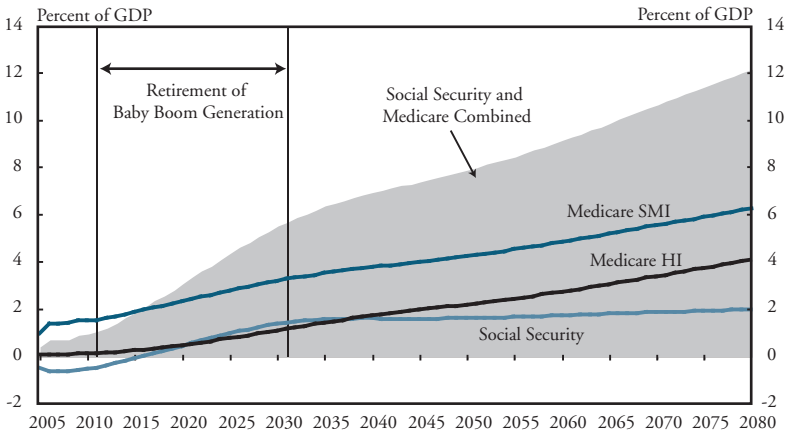
Chart 4 reveals an important difference between Social Security and Medicare. From 2005 to 2023, Social Security expenditures exceed Medicare's. In 2005, Social Security expenditures were about one-and-a-half times those of Medicare—4.3 percent of GDP versus 2.7 percent. Beginning in 2024 and continuing throughout the forecast horizon, Medicare expenditures will be larger than Social Security's. In fact, in 2080 Medicare's expenditures are projected to be more than double Social Security's—13.8 percent of GDP versus 6.4 percent.

Such large increases in expenditures cannot reasonably be supported by the federal government without significant changes—either in these programs or in the spending and taxing priorities in the rest of the government. If overall federal revenue remains at its 50-year average of 18 percent of GDP, and if Social Security and Medicare have first claim to those revenues, then these two programs alone would eventually absorb more than total government revenue. Right now, these two

Chart 5

FEDERAL REVENUE SHORTFALL FROM SOCIAL SECURITY AND MEDICARE

[Revenue from government to program = (+), revenue from program to government =(-)]



Source: Tables VI.F4 and VI.F9, *2005 Social Security Trustees Report;* Tables III.A2, III.A4, II.E1, III.B4, *2005 Medicare Trustees Report*

programs absorb about one-third of the total. Under current law, Social Security and Medicare would absorb about two-thirds of revenue in 2030, when the last baby boomers retire, and they would absorb everything (18 percent of GDP) by 2074.

The magnitude of the fiscal challenge facing the United States—finding the revenue to pay for these expenditures—is growing. A revenue shortfall—the difference between promised expenditures and dedicated revenue—already exists and is projected to become overwhelming in the future (Chart 5). The current shortfall is 0.4 percent of GDP and is projected to climb to 12.2 percent in 2080. The rise will be particularly sharp between 2010 and 2030—the years when the baby-boom generation retires.

Chart 5 also shows another difference between Social Security and Medicare. Between now and 2017, Social Security actually shows a revenue surplus (a negative revenue shortfall in the chart). However, the revenue shortfalls for Medicare HI and SMI already offset the revenue *surplus* for Social Security, resulting in the net shortfall of 0.4 percent of

GDP in 2005. In other words, to pay for Social Security and Medicare benefits, the government must raise revenue from other sources, reduce spending on other programs, or increase federal borrowing by running a larger budget deficit.

Taking a longer-term perspective, the Trustees estimate that the present value of the total revenue shortfall over the next 75 years is $35.6 trillion. This figure represents the combined unfunded liabilities of Social Security and Medicare, or the sum of the Social Security unfunded liability ($5.7 trillion), the Medicare HI unfunded liability ($8.8 trillion), and the Medicare SMI unfunded liability ($21.1 trillion). As a result, the federal government must raise revenue or cut other government programs by $35.6 trillion (in present value terms) if they are going to pay for all promised expenditures over the next 75 years.

A 75-year horizon, however, is not sufficient to capture the enormity of the problem. Looking beyond the next 75 years, expenditures are projected to exceed dedicated revenue by ever greater amounts. For example, the excess is projected to be 12 percent at the end of the 75-year horizon. However, even with discounting, the Trustees estimate that the present value of the combined revenue shortfall over an infinite horizon is $79 trillion—more than double the $35.6 trillion shortfall over the next 75 years.

According to the Trustees, to eliminate the $35.6 trillion revenue shortfall, taxes would have to be raised immediately and permanently by 5.7 percent of GDP. To eliminate a $79 trillion revenue shortfall, taxes would have to be raised by 8.3 percent of GDP. Historically, government revenue has averaged about 18 percent of GDP.

IV. THE NEED FOR PROMPT CORRECTIVE ACTION

With a fiscal challenge so large, there will be a tendency to postpone taking action. Nevertheless, postponing action would be a mistake for several reasons. First, if benefits are going to be cut, or taxes raised, everyone must have time to adjust their plans for working, saving, and retirement spending, so that their personal resources plus those from the government will be sufficient to meet their retirement goals.

In addition, the problem—which is already large—will only become larger the longer reforms are delayed, resulting in the need for more drastic solutions. The problem becomes larger over time because the divergence between promised benefits and dedicated revenues grows faster than the overall economy.

For example, the present value of the revenue shortfall for 2005-80 is 5.7 percent of the present value of GDP. However, if nothing is done until 2021—when the Medicare HI Trust Fund assets are depleted—the shortfall from 2021 to 2080 grows to 7.5 percent of the present value of GDP.[29]

In addition, the present value of the revenue shortfall over "the next 75 years" also grows larger the longer action is postponed. Consider the following example. The revenue shortfall is projected to grow over time and is estimated to be 12.17 percent of GDP in 2080. Suppose that the revenue shortfall remained at 12.17 percent of GDP in 2081-85. (This is a conservative assumption because the shortfall is growing over time.) Assume, further, that real GDP grows 1.8 percent per year—as assumed by the Trustees—and that the nominal discount rate is 5.7 percent. The present value of the revenue shortfall over the 75-year horizon from 2005 to 2080 is $36.3 trillion, while the revenue shortfall over the 75-year horizon from 2010 to 2085 is larger—$38.6 trillion.[30] Thus, the present value of the revenue shortfall over "the next 75 years" grows over time.

The problem is particularly acute for Social Security and Medicare HI, which face solvency issues. To eliminate the 75-year unfunded liability of the Social Security Trust Fund, the Social Security payroll tax rate would need to increase from 12.40 percent to 14.32 percent. If the government waits until 2041 to fix Social Security, the tax rate would have to increase to 16.66 percent and continue increasing to 18.10 percent in 2079.[31] Similarly, to eliminate the unfunded liability of the Medicare HI Trust Fund, the payroll tax rate would need to increase from 2.9 percent to 5.99 percent. If the government waits until 2020 to fix Medicare HI, the year that the Medicare HI trust fund assets are exhausted, the payroll tax rate would have to increase to 3.79 percent and continue increasing to 12.33 percent in 2079.[32]

V. CONCLUSIONS

Spending on Social Security and Medicare is projected to grow much faster than the overall economy in the coming years. While nominal GDP is projected to grow an average of 4½ percent annually between now and 2080, nominal spending on Social Security and Medicare combined is projected to grow an average of almost 6 percent per year. With such different growth rates, total spending on the two programs is projected to balloon from 6 percent of GDP today to 20 percent in 2080.

While the Social Security fiscal challenge is large, the Medicare challenge is even larger. For example, the Social Security revenue shortfall remains relatively stable as a share of GDP once the baby-boom generation retires. In contrast, the Medicare revenue shortfall continues to increase as a share of GDP even after the baby-boom generation retires. In particular, the Medicare unfunded liability ($29.9 trillion for HI and SMI) is more than five times the Social Security unfunded liability ($5.7 trillion).

The government's fiscal challenge is to insure the long-run viability of both programs. Under current law, the dedicated sources of revenue available to the government are woefully inadequate for financing the benefits promised to current and future beneficiaries. The present value of the government's future obligations over the next 75 years is estimated to be $35.6 trillion. As a result, the government would need to increase revenues, reduce spending, or increase borrowing by running larger budget deficits. However, the cumulative value of the larger budget deficits would need to be $35.6 trillion in present value terms, which is significantly larger than the nation's federal debt—the cumulative sum of past budget deficits of $7.4 trillion at the end of fiscal year 2004. Alternatively, changes would need to be made to the structure of the two programs by reducing future benefits, increasing dedicated revenues, or making even more fundamental changes. In fact, any viable solution is likely to involve changes in the Social Security and Medicare programs themselves, along with changes in other government spending and revenue.

APPENDIX 1

THE DEMOGRAPHIC CHANGES BEHIND THE FISCAL CHALLENGE

This appendix summarizes the evidence on the aging of the population and the three reasons behind the aging.

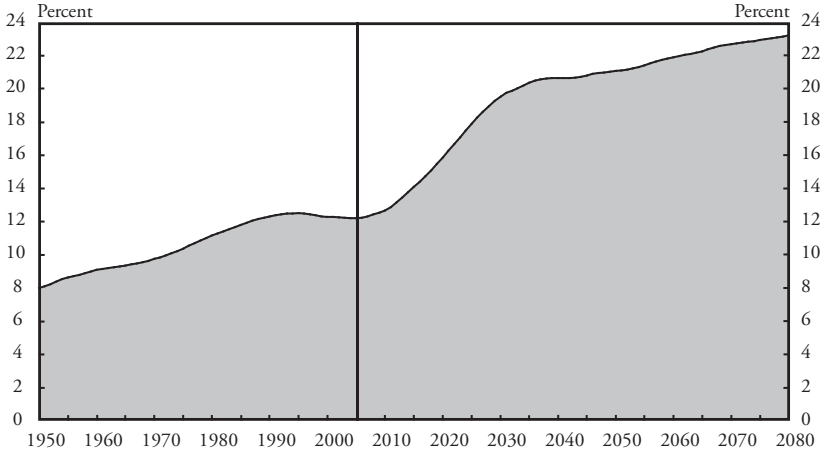
The U.S. population is getting older and will continue to age into the first half of this century (Appendix I Chart 1). In 1930, around the time of Social Security's passage, 5.5 percent of U.S. population was age 65 and over. Over the next 75 years, that ratio more than doubled to 12 percent in 2005. And according to population estimates provided by the Social Security Administration, the ratio will almost double again by 2080 (rising to 23 percent).

The U.S. population is aging for three major reasons. The first reason is that Americans are having fewer children. In particular, the total fertility rate—the average number of children a woman bears in her lifetime—has declined (Appendix I Chart 2).[33] In 1940, the total fertility rate in the United States stood at 2.23 children per woman. This number peaked at 3.68 children per woman in 1957 and steadily declined in the last half of the 20th century, falling below two in the 1970s. Currently, however, the total fertility rate for the United States has stabilized at approximately two. Projections from the Social Security Administration assume the ultimate total fertility rate is 1.95 children per woman (reached in 2029). The Social Security Administration cites several reasons for the decline in fertility rates in the United States, including changes in social attitudes, economic conditions, and the use of various birth control methods. For example, they note an increase in the percentage of women never to marry, of women who are divorced, and of young women to enter the labor force. In combination, all these factors have led to lower fertility rates in the United States and fewer children

The second reason for the aging of the population is increased longevity (Appendix I Chart 3). As a result of general health improvements and medical care improvements, people are living longer and healthier. In 1940, life expectancy at birth was 64 years; in 2005, this

Chart 1

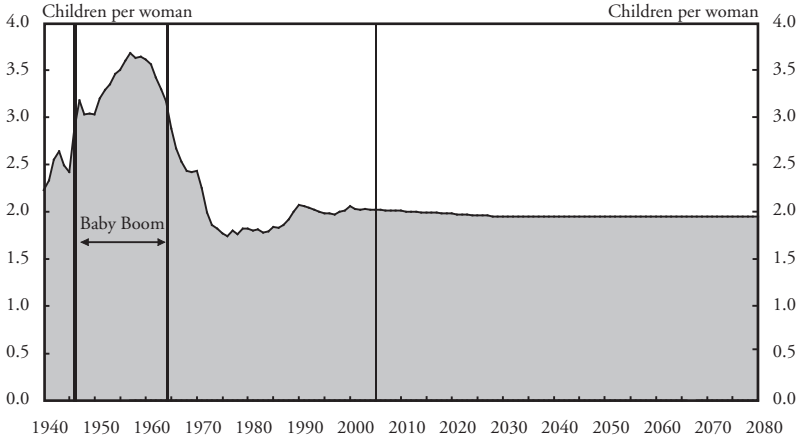
SHARE OF U.S. POPULATION AGED 65 AND OVER



Source: Table V.A2, *2005 Social Security Trustees Report*

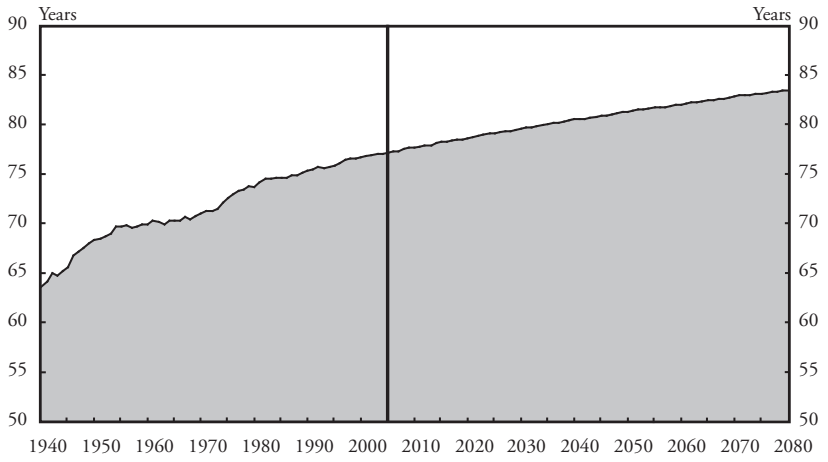
Chart 2

TOTAL FERTILITY RATE



Source: Table V.A1, *2005 Social Security Trustees Report*

Chart 3
LIFE EXPECTANCY AT BIRTH



Source: Table V.A3, *2005 Social Security Trustees Report*

age has increased to 77. Moreover, by 2080, the Social Security Administration projects life expectancy at birth will increase to 83, almost 20 years more than in 1940.

The third reason for the aging of the population is that the baby-boom generation is getting older. Children born between 1946 and 1964 will reach retirement age over the next 25 years, and the United States is on the cusp of a large share of the population entering retirement. In 2006, the first of the baby-boom generation reached age 60, and these people can expect to live another 10-20 years.

The aging of the U.S. population means there will be relatively fewer workers and more retirees (Appendix I Chart 4). The dependency ratio is the number of working age individuals (ages 20 through 64) available to support one person age 65 and over. This ratio has been falling in the past half-century and is projected to continue to fall. In 1950, the ratio of the working age population to the 65 and over population was seven. Presently, the ratio is five; and by 2080, the Social Security Administration estimates that there will only be 2.3 workers for every person age 65 and over.

Chart 4

THE DEPENDENCY RATIO

Source: Table V.A2, *2005 Social Security Trustees Report*

APPENDIX 2

CALCULATION OF DATA FOR MEDICARE CHART

The Medicare Annual Report does not provide as much detailed information as the Social Security Annual Report. As a result, some of the data shown in Chart 2 were estimated by the authors using the following procedures.

Table II.E1 (p. 14) of the Medicare Annual Report provides estimates of total income (including interest income), total expenditures, change in the Trust Fund, and Trust Fund at yearend 2004-14. According to the table, asset sales begin in 2012 (since the change in the Trust Fund is negative beginning in 2012). As a result, all of the interest income on the assets is spent on expenditures beginning in 2012.

Table VI.F9 of the *Social Security Annual Report* (single tables) reports Medicare HI income excluding interest income for 2005-80. Therefore, combining the results from Tables II.E1 and VI.F9, interest income for 2005-14 can be calculated.

There is a difference between "Total expenditures" reported in Table II.E1 and "cost" reported in Table VI.F9. For the ten years between 2005 and 2014, the average difference is $3.74 billion. According to Table II.B1 of the *Medicare Annual Report* (p. 4), the "administrative expenses" for Medicare HI were $3 billion in calendar year 2004. So, the authors assume that administrative expenses are $3.74 billion in the calculations.

The authors calculated estimates of interest income and asset sales for the period 2015-20. These estimates are not needed beyond 2020 because Trust Fund assets are depleted in 2020. Table VI.F9 of the *Social Security Annual Report* is used to calculate revenue and expenditures for the period from 2021 to 2080. The following procedure was used to estimate "interest income" and "asset sales" from 2015 to 2020.

- The interest rate on Trust Fund assets is assumed to be 5.8594 percent.[34]
- Between 2005 and 2011, some of interest income earned on Trust Fund assets is spent on expenditures while the rest is used to augment the Trust Fund balance.

- According to Table II.E1, asset sales begin in 2012, which suggests that interest income plus dedicated income was no longer sufficient to cover all expenditures. Therefore, Tables II.E1 and VI.F9 provide estimates of dedicated revenue, interest income spent, asset sales, and expenditures for 2005-14.
- For 2015-20, interest income spent and asset sales are calculated sequentially.
    - Interest income in year t = 5.86 percent * Trust Fund assets in year (t-1).
    - Trust Fund asset sales in year t = expenditures in year t – dedicated revenue in year t – interest income in year t (from previous bullet).
    - Trust Fund assets at the end of year t = Trust Fund assets at the end of year (t-1) – asset sales in year t.
    - Move to the next year, t+1.

As a check on the calculation, the *Medicare Annual Report* states that 19 percent of expenditures were met by redeeming assets in 2019 (page 15). According to the authors' calculations, 18.1 percent of expenditures were met by redeeming assets in 2019. While not exact, it seemed "close enough."

ENDNOTES

[1]In 2004 (the last year for which data are available), Social Security paid monthly benefits to about 30 million retired workers, 6 million disabled workers, and 11 1/2 million family members of retired, disabled, or deceased workers (Tables V.C4 and V.C6 of the *Social Security Annual Report*).

[2]Specifically, a worker's 35-year earnings history is inflated to current values using a national average wage index (AWI) calculated by the SSA each year. To calculate the AWI, Social Security tabulates wage data based on wages subject to federal income taxes and contributions to deferred compensation plans. Social Security calculates aggregate wages and then divides by the total number of workers, yielding an average per worker. The worker's earnings in each year before he turned 60 are adjusted; they are multiplied by the ratio of the AWI in the year he turned 60 to the AWI in each earlier year. The "average indexed monthly earnings" (AIME) is then the monthly average of the 35 years of adjusted earnings. Finally, the AIME amount is used to calculate the Primary Insurance Amount (PIA), which is the basic Social Security monthly benefit amount. The PIA formula is designed so that lower wage workers receive a larger proportion of their past earnings than higher wage workers. The PIA formula changes annually, but for 2006 the formula is:

PIA = [90% of the first $656 of AIME] + [32% of AIME between $656 and $3,955] + [15% of AIME above $3,955)]

In the formula for 2006, $656 and $3,955 are "bend points" that change annually based on the formula, which is indexed to average wages.

[3]The Social Security Administration calculates the COLA, which is equal to the percentage increase in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) from the third quarter of the previous year to the third quarter of the current year. Each third quarter index number is calculated as an average of the monthly index numbers in that quarter.

[4]The reduction in monthly benefits from early retirement is based on the number of months that benefits are paid prior to attainment of full retirement age. In addition, Social Security benefits may be reduced if the recipient earns more than an exempt amount. Delaying retirement increases one's benefits in two ways. First, working longer will typically lead to higher average earnings and therefore higher benefits. Second, by postponing retirement, a person's benefits will be increased by a certain percentage.

[5]Some federal employees (those in the Civil Service Retirement System hired before 1983), and some state and local government employees that are covered under alternative pension plans do not pay into Social Security.

[6]The Social Security Trust Fund receives the revenue from the 1983 legislation, while the Medicare HI Trust Fund receives the (smaller) revenue increment from the 1993 legislation.

[7]"The Impact of Trust Fund Programs on Federal Budget Surpluses and Deficits," CBO, November 4, 2002, is a good source of information.

[8]The Congressional Research Service summarizes the Trust Fund as follows: "While the trust funds have an important role in monitoring the finances of the program and maintaining its fiscal discipline, they are basically accounting devices. The federal securities they hold are not assets for the government. When

an individual buys a government bond, he or she has established a claim against the government. When the government issues a bond to one of its own accounts, it hasn't purchased anything or established a claim against some other entity or person. It is simply creating a form of IOU from one of its accounts to another. It certainly establishes legal claims against the government for the Social Security system (i.e., it is a legal form of indebtedness of the government and does count as part of the federal debt…), but the system is part of the government. Those claims are not resources the government has at its disposal to pay for future Social Security claims. Simply put, the trust funds do not reflect an independent store of money for the program or the government, and taking Social Security 'off-budget' does not change this." "Social Security: and the Federal Budget: What Does Social Security's Being 'Off Budget' Mean?" *CRS Report for Congress* (98-422 EPW), by David Stuart Koitz, May 5, 1998.

[9]As the CBO explains (p. 2), "No public or outside entity pays that interest; it is a credit from the government's general fund to the Social Security trust funds.… All such intragovernmental transfers are required by law, and the accounting used for those transfers shows them as trust fund 'receipts,' despite their source."

[10]An open question, which has important implications for government borrowing, is the effect of Social Security surpluses on spending and taxing in the rest of the government budget. In particular, did the government spend more on other programs or raise less in other taxes than they would have otherwise because Social Security ran a surplus? If the government did not spend more or tax less elsewhere in the budget, then the Social Security surplus reduced the federal debt to the public by an amount roughly equal to the Trust Fund balance. But, if the government did spend more or tax less elsewhere in the budget, then the Social Security surplus has reduced the federal debt to the public by a smaller amount, or perhaps not at all.

[11]Of course, the existing law could be changed.

[12]The Board of Trustees is composed of six members: the Secretary of the Treasury, Secretary of Labor, the Secretary of Health and Human Services, the Commissioner of Social Security, and two other public trustees appointed by the President and confirmed by the Senate, currently John L. Palmer and Thomas R. Saving. John L. Palmer and Thomas R. Saving were renominated to serve as public trustees of the Social Security Board of Trustees on November 7, 2005. Both are still awaiting confirmation but continue to serve as public trustees until confirmed. The Board serves jointly over both the Social Security and Medicare Trust funds.

[13]The actuarial opinion that is included in the *Annual Report* states that these forecasts are consistent with "sound principles of actuarial practice" and the assumptions used are "reasonable, taking into consideration both past experience and future expectations." Goss, S.C.; Statement of Actuarial Opinion, *Social Security Trustees Report 2005*, p. 217.

[14]To a first approximation, growth in GDP equals growth in productivity plus growth in the number of workers and growth in Social Security expenditures equals growth in number of people receiving benefits plus growth in benefits per person. Since benefits per person are indexed to wages, they grow at the rate of

productivity growth. Therefore, if growth in the number of workers equals the growth in the number of people receiving benefits, spending relative to GDP should be constant.

[15]Taxable payrolls decline as a share of GDP largely due to the expansion of employer-provided health insurance relative to wages.

[16]The terms "surplus" and "deficit" refer to the difference between dedicated revenues and expenditures. These surpluses and deficits are not the same as the "off-budget" surplus and deficit. The off-budget surplus and deficit include interest income as income, which is not included in surplus or deficit.

[17]This terminology is similar to that used in the Medicare Annual Report (p. 174). They refer to the "Net Results for Trust Fund Perspective," which corresponds to this article's "unfunded liability of the trust fund." They also refer to the "Net Results For Budget perspective," which corresponds to the "unfunded liability."

[18]The HI payroll tax applies to all federal workers, including those hired before 1984 and to some of the state and local workers that are not covered by Social Security.

[19]The Centers for Medicare and Medicaid Services (CMS) calculate the monthly premium by projecting total enrollees and total expected benefits distributed to those age 65 and over in the coming year. The average per capita monthly cost of the program is the amount of the premium charged to unqualified voluntary enrollees.

[20]Other charges for hospital stays may apply, depending on the length of stay. See *www.medicare.gov* for detailed information regarding premium, deductible, coinsurance, and copayment amounts for other Medicare services.

[21]See the *2005 Annual Report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplemental Medical Insurance Trust Funds*, page 173. The split was 50 – 50 from 1966 to 1975. It then began to decline and has been about 25 – 75 since 1984. Table II.C2, *2002 Medicare Trustees Report*, p. 73.

[22]Recipients of Part B will pay higher premiums if they do not enroll when they are first eligible (premiums increase 10 percent for each 12-month period from which they were first eligible that they did not sign up).

[23]The inflation factor is equal to the percentage increase in the total estimated per capita cost for all Part B enrollees.

[24]See "A Message from the Public Trustees" reported in *A Summary of the 2005 Annual Reports, Social Security and Medicare Boards of Trustees.* They also note that "during the 1990s … evidence mounted for a persistent 1 to 2 percent differential due to the increasing use of new technologies."

[25]HI revenues as a share of GDP increase to 1.53 percent by 2023 and remain there until 2038, when they decline slowly to 1.44 percent by 2080.

[26]It is slightly larger than the $8.6 trillion discussed earlier. The difference between the two estimates reflects the current value of the Trust Fund assets ($265 billion at the end of 2004). The current value of Trust Fund assets equals the present value of the gray areas of Chart 2.

[27]Since the SMI Trust Fund has unlimited authority to draw on general revenue as needed, there can never be a gap between the program's promised expenditures and the resources available to meet those expenditures. Therefore, there is no unfunded liability of the SMI Trust Fund that would be comparable to the unfunded liabilities of the Social Security and Medicare HI Trust Funds.

[28]By programs, the infinite horizon fiscal liability is $11.1 trillion for Social Security, $24.1 trillion for Medicare HI, and $44 trillion for Medicare SMI. Sources: Table IV.B6, *Social Security Annual Report*, p. 59; Table III.B10, Medicare Annual Report, p. 63; Table III.C21, *Medicare Annual Report*, p. 101; Table III.C21, Medicare Annual Report, p. 112.

[29]This calculation assumes a nominal discount rate of 5.7 percent.

[30]The Trustees estimate that the shortfall for 2005-80 is $35.6 trillion. The difference reflects slightly different discount rates.

[31]See p. 16, 2005 *Social Security Trustees Report*

[32]See p. 58, 2005 *Medicare Trustees Report*, and Table VI.F2 in the *2005 Social Security Annual Report.*

A similar result holds for benefit cuts. By acting now, an immediate and permanent Social Security benefit cut of 13 percent would eliminate the 75-year unfunded Trust Fund liability (p. 16, *Social Security Annual Report*). But if the government waits until 2041 when the Social Security Trust Fund is depleted, a benefit cut of 26 percent would be needed, with more cuts amounting to 32 percent in 2080 (*Social Security Annual Report*, p. 16). Medicare HI benefit cuts follow a similar pattern. By acting now, an immediate and permanent benefit cut of 48 percent would be needed (*Medicare Annual Report* p. 16). But if the government waits until 2020 when the Medicare HI Trust Fund is depleted, a benefit cut of 21 percent would be needed, with more cuts amounting to 75 percent in 2080. The benefit cut is calculated as "balance rate"/"cost rate" in 2020 and 2080.

[33]The Social Security Administration defines total fertility rate as "the average number of children that would be born to a woman in her lifetime if she were to experience the birth rates by age observed in, or assumed for, the selected year, and if she were to survive the entire childbearing period. A rate of 2.1 would ultimately result in a nearly constant population if net immigration were zero and if death rates were constant."

[34]According to Table II.B1 of the *Medicare Annual Report*, (p. 4) interest income in 2004 was $15 billion and Trust Fund assets at the end of 2003 were $256 billion. Dividing interest income in 2004 by Trust Fund assets at the end of 2003 yields an interest rate of 5.8594 percent. Data for 2005 and beyond were not used because the interest income reported in Table II.E1 was spent on paying expenditures, so it did not represent total interest income earned on the assets.

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More information is available at:

Centers for Medicare and Medicaid Services at *www.cms.hhs.gov*

Congressional Budget Office at *www.cbo.gov*

Single-Year Tables Consistent with 2005 OASDI Trustees Report at *www.ssa.gov/OACT/TR/TR05/lrIndex.html*

Social Security Administration at *www.ssa.gov or www.socialsecurity.gov*